

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A ligand-binding solid surface comprising:
 - a) a soft metal solid support and
 - b) a heterobifunctional spacer having at least two functional groups, said functional groups including a soft base, said spacer being chemi- or physisorbed to said soft metal solid support via soft metal-soft base bonding wherein the soft base is selected from the group consisting of biotinamide and iodoacetyl.
2. (previously presented) A solid surface of claim 1 in which the soft metal solid support is selected from the group consisting of silver, copper, gold, platinum (II), mercury, mercury (II), thallium, cadmium (II), platinum (IV) and palladium (II) covered surfaces.
3. (previously presented) A solid surface of claim 1 in which the heterobifunctional spacer comprises a hydrocarbon having a chain length of about 10 to about 40 carbon atoms.
4. (currently amended) A solid surface of claim 1 wherein the soft base is selected from the group consisting of an RSH, RS⁻, R₂S, RSSR, CN⁻, S₂O₃²⁻, I⁻, R₃P, (RO)₃P, C₂H₄ and C₆H₆ group, where R is an organic group heterobifunctional spacer is succinimidyl-6-(biotinamido)hexanoate.
5. (currently amended) A method for preparing a ligand-binding solid surface, comprising:
 - a) selecting a soft metal solid support; and
 - b) immobilizing a heterobifunctional spacer on said solid support via soft metal-soft base bonding, said spacer having at least two functional groups, said functional groups including a soft base, wherein the soft base is selected from the group consisting of biotinamide and iodoacetyl.

6. (previously presented) A method of claim 5 in which the soft metal solid support is selected from the group consisting of silver, copper, gold, platinum (II), mercury, mercury (II), thallium, cadmium (II), platinum (IV) and palladium (II) covered surfaces.

7. (previously presented) A method of claim 5 in which the heterobifunctional spacer comprises a hydrocarbon of about 10 to about 40 atoms in length.

8. (currently amended) A method of claim 5 wherein the soft base is selected from the group consisting of an ~~RSH, RS⁻, R₂S, RSSR, CN⁻, S₂O₃²⁻, I⁻, R₃P, (RO)₃P, C₂H₄ and C₆H₆ group, where R is an organic group~~ heterobifunctional spacer is succinimidyl-6-(biotinamido)hexanoate.

9. (previously presented) An assay system comprising a plurality of surfaces of claim 1.

10. (previously presented) A method for detecting the presence of a biological molecule comprising exposing a sample containing biological molecules to a surface of claim 1, wherein the heterobifunctional spacer includes a ligand for binding to said biological molecules.

11. (previously presented) A surface of claim 1 further comprising an oligonucleotide.

12. (new) A solid surface of claim 1 in which the heterobifunctional spacer is succinimidyl 6-[6-((iodoacetyl)amino)-hexanoyl]amino]hexanoate.

13. (new) A method of claim 5 wherein the heterobifunctional spacer is succinimidyl 6-[6-((iodoacetyl)amino)-hexanoyl]amino]hexanoate.

14. (new) A ligand-binding solid surface comprising:

a) a soft metal solid support and

RECEIVED

-4-

MAR 09 2004

TECH CENTER 100/270A

Amendment
(Dated October 2, 2003 – Paper No. 8)
Application Serial No. 10/029,113
Attorney's Docket No. 25527-0001 C1

b) a heterobifunctional spacer having at least two functional groups, said functional groups including a soft base and an N-hydroxy succinimide ester, said spacer being chemi- or physisorbed to said soft metal solid support via soft metal-soft base bonding wherein the soft base is selected from the group consisting of RSH, RS⁻, R₂S, RSSR, CN⁻, S₂O₃²⁻, I⁻, R₃P, (RO)₃P, C₂H₄ and C₆H₆ group, where R is an organic group.

15. (new) A solid surface of claim 14 in which the soft metal solid support is selected from the group consisting of silver, copper, gold, platinum (II), mercury, mercury (II), thallium, cadmium (II), platinum (IV) and palladium (II) covered surfaces.

16. (new) A solid surface of claim 14 in which the heterobifunctional spacer comprises a hydrocarbon having a chain length of about 10 to about 40 carbon atoms.

17. (new) A method for preparing a ligand-binding solid surface, comprising:
a) selecting a soft metal solid support; and
b) immobilizing a heterobifunctional spacer on said solid support via soft metal-soft base bonding, said spacer having at least two functional groups, said functional groups including a soft base and an N-hydroxy succinimide ester, wherein the soft base is selected from the group consisting of RSH, RS⁻, R₂S, RSSR, CN⁻, S₂O₃²⁻, I⁻, R₃P, (RO)₃P, C₂H₄ and C₆H₆ group, where R is an organic group.

18. (new) A method of claim 17 in which the soft metal solid support is selected from the group consisting of silver, copper, gold, platinum (II), mercury, mercury (II), thallium, cadmium (II), platinum (IV) and palladium (II) covered surfaces.

19. (new) A method of claim 17 in which the heterobifunctional spacer comprises a hydrocarbon of about 10 to about 40 atoms in length.

20. (new) An assay system comprising a plurality of surfaces of claim 14.

21. (new) A method for detecting the presence of a biological molecule comprising exposing a sample containing biological molecules to a surface of claim 14,

wherein said oligonucleotide attached to the heterobifunctional spacer is adapted for binding to said biological molecules.

22. (new) A method for recovering ligands immobilized by an iodine-containing heterobifunctional spacer that is chemi- or physisorbed on a silver-containing support via soft metal-soft base bonding, said method comprising:

- a) contacting said silver-containing support with a thiodyglycol solution;
- b) exposing said silver-containing support in contact with said thiodyglycol solution to ultrasonic energy; and
- c) recovering said ligands from said thiodyglycol solution.

23. (new) The method for recovering ligands of claim 22, wherein said iodine-containing heterobifunctional spacer comprises an iodoacetyl moiety.

24. (new) The method for recovering ligands of claim 22, wherein said iodine-containing heterobifunctional spacer comprises succinimidyl 6-[6-((iodoacetyl)amino)-hexanoyl]amino]hexanoate.

RECEIVED
MAY 12 2004

MAR 09 2004

U.S. GOVERNMENT LIBRARIES